

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 16, 1996  
Date Received: December 9, 1996  
Project: Metro Grab 12/9/96, PO #M55476  
Date Samples Extracted: December 10, 1996  
Date Extracts Analyzed: December 11, 1996

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR CHROMIUM, COPPER, NICKEL, ZINC  
USING METHOD 6010**

**Samples Processed Using Method 3005A  
Results Reported as mg/L (ppm)**

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M55476	0.32	0.50	0.43	0.11
Method Blank	<0.05	<0.05	<0.05	<0.05

**FRIEDMAN & BRUYA, INC.**

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Date of Report: December 16, 1996

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**QUALITY ASSURANCE RESULTS  
FOR TOTAL METALS BY  
INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Laboratory Code: 74478 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.32	0.33	3	0-20
Copper	mg/L (ppm)	0.50	0.50	0	0-20
Nickel	mg/L (ppm)	0.43	0.44	2	0-20
Zinc	mg/L (ppm)	0.11	0.11	0a	0-20

Laboratory Code: 74478 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
				<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	0.32	109	107	80-120	2
Copper	mg/L (ppm)	5	0.50	110	108	80-120	2
Nickel	mg/L (ppm)	10	0.43	105	106	80-120	1
Zinc	mg/L (ppm)	5	0.11	103	104	80-120	1

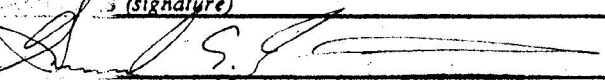
Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	110	109	80-120	1
Copper	mg/L (ppm)	5	113	111	80-120	2
Nickel	mg/L (ppm)	10	110	109	80-120	1
Zinc	mg/L (ppm)	5	108	107	80-120	1

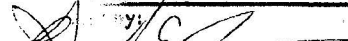

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

KJ AI  
12<sup>KJ</sup>.09.96  
2:10

To: Alaskan Copper Works Contact: Gerald Thompson  
628 Hanson St  
Zip Seattle WA 98134  
(206) 382-8379 Date 12-9-96

PROJECT NAME		PURCHASE ORDER #	
7238	METRO Grab 12/1/06	m 55476	
(signature)		PROJECT LOCATION	
		3200 6th Ave S.	
		SAMPLE DISPOSAL INFORMATION	
		<input type="checkbox"/>	Dispose after 30 days
		<input checked="" type="checkbox"/>	Return Samples
		<input type="checkbox"/>	Call for Instructions

[illegible]

Signature	PRINT NAME	COMPANY	Date	Time
	GERARD Thompson	ACW	12/9/96	1:53pm
	KURT JOHNSON	FB&I	12/9/96	1:53pm
by:				

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley D. Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

**December 16, 1996**

**INVOICE # 96ACU1216-1  
DUPLICATE COPY**

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project Metro Grab 12/9/96, PO #M55476: Results of testing requested by  
Gerry Thompson, Project Manager for material submitted on December 9,  
1996.

1 water sample analyzed for  
Chromium, Copper, Nickel, and Zinc  
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due .....

\$ 65.00



FRIEDMAN & BRUYA, INC.

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3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

December 16, 1996

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on December 9, 1996 from your Metro Grab 12/9/96, PO #M55476 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

A handwritten signature in black ink, appearing to read 'Kurt Johnson', with a stylized flourish at the end.

Kurt Johnson  
Chemist

keh  
Enclosures  
ACU1216R.DOC